RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND DIET WITH DYSMENORRHOEA DEGREE ON STUDENTS OF THE FACULTY OF HEALTH SCIENCES SEBELAS APRIL UNIVERSITY DURING COVID 19 PANDEMIC IN 2022

Witri Dewi Mentari [1], Febri Nurwanti [2]
Public Health Science Study Program
Faculty of Health Science, Sebelas April University
witridewimentari@unsap.ac.id

Article Info	ABSTRACT
	Dysmenorrhea is pain or tenderness in the lower abdomen that occurs during a woman's menstrual cycle. There are several factors that can affect dysmenorrhea, one of which is physical activity and diet, the independent variables in this study are physical activity and diet with the dependent variable being the degree of dysmenorrhea. This study aims to determine the relationship between physical activity and diet with dysmenorrhea degree in Faculty of Health Sciences students, Sebelas April University during COVID-19 pandemic in 2022. This research uses quantitative research method with a cross-sectional observational analytic design. The population in this study were students from the health sciences faculty, amounting to 344 female students with a total sample of 119 female students. The sampling technique used stratified random sampling. The results showed that the frequency of the most dominant degree of dysmenorrhea in the heavy category was 66 respondents (55.5%), light physical activity was the most dominant with 56 respondents (47.1%), and fast food eating patterns were the most dominant in the frequent category with 63 respondents (52.9%). The Chi Square test showed that there is a relationship between physical activity and diet with the degree of dysmenorrhea in students of the Faculty of Health Sciences, Universitas Sebelas April during the COVID-19 pandemic in 2022 with a p-value of 0.000.

Corresponding Author:

Witri Dewi Mentari
Public Health Study Program,
Faculty of Health Science, Sebelas April University
Jalan Cipadung No 54 Sumedang
Email: witridewimentari@unsap.ac.id

1. INTRODUCTION

Dysmenorrhea comes from the Greek word "dys" which means difficult or painful or abnormal. "Meno" means moon and "rrhea" which means flow. Dysmenorrhea is a pain or pain in the lower part of the

abdomen that occurs when a woman has a menstrual cycle. Usually the pain felt reaches its peak within 24 hours and after 2 days it will disappear. (Saraswati, 2019). The incidence of dysmenorrhea in the world is very large, because globally women (84%) have a higher percentage of lack of physical activity than men, According to World Health Organization (WHO) data in 2013 in Sugiyanto's study, the incidence of dysmenorrhoea in Indonesia is as much as 55% among the productive age, because women in Indonesia have a sedentary lifestyle or have a low intensity of physical activity. (Sugiyanto & Luli, 2020). Based on data from indrayani's research in 2021, the incidence of dysmenorrhea in West Java is quite high, namely 54.9% of women experiencing dysmenorrhea, consisting of 24.5% experiencing mild dysmenorrhea, 21.28% experiencing moderate dysmenorrhea and 9.36% experiencing severe dysmenorrhea. (Indrayani & Antiza, 2021). Based on the results of research by Susan, Y, and Yuliani, it was shown that most of the young women at SMK Pelita Al-Ikhsan, Ujungjaya District, Sumedang Regency, expressed moderate pain when experiencing menstruation (35.3%). (Becker et al., 2015)

And based on data from a preliminary study conducted by researchers using a google form survey of health faculty students eleven april there are 10% of people experiencing mild dysmenorrhoea, 60% of people having moderate dysmenorrhoea, and 30% of people having severe dysmenorrhea. The COVID-19 pandemic is suspected to be one of the factors in the severity of primary dysmenorrhea pain due to increased production of prostaglandin hormones due to insufficient physical activity.

The COVID-19 phenomenon that began in Wuhan and spread rapidly globally so that WHO announced the outbreak in March 2020 COVID-19 has become a global pandemic. The number of infected with the coronavirus in the world has reached 517,381,524, and 6,276,731 people have died, 38,637,059 active positive people (still being treated), and 472,467,734 patients have been declared cured. The number of coronavirus cases in Indonesia was 6,048,685 people, while the dead were 156,396 people, and the recovered ones were 5,886,211 people. Thus placing Indonesia in 19th place out of 228 countries and territories in the world affected by the coronavirus pandemic. (Farma,A. 2022).

Physical activity is a body movement produced by skeletal muscles that requires energy expenditure, physical activity is divided into 3 categories, namely light, medium, and heavy. However, when the COVID-19 pandemic has imposed restrictions on outdoor activities, this has caused a decrease in a person's physical activity. Lack of physical activity results in a decrease in the distribution of oxygen in the systemic circulation which results in an increase in a person's perception of the onset of pain, including dysmenorrhea. (According to WHO 2014 in (Pratiwi & Sjattar, 2021). According to the Ministry of Health of the Republic of Indonesia, physical activity is considered sufficient when done for 30 minutes every day or 3-5 days a week. (Tristiana, 2017). However, when the COVID-19 pandemic has imposed restrictions on outdoor activities, this has caused a decrease in a person's physical activity. Low physical activity is a risk factor for various comorbidities such as obesity, diabetes, hypertension, and other health conditions.

Physical activity can reduce the risk of menstrual disorders, exercise can be one of the interventions to reduce the risk of dysmenorrhea events. Exercise can be beneficial in order to increase blood flow to the pelvic part and will also stimulate endorphins that act as non-specific analgesics. Exercise can reduce stress, fatigue, and depressive mood that can usually occur in primary dysmenorrhea. (Tristiana, 2017)

Diet is a way to regulate the quantity of food types so that it can improve the quality of health, psychology, prevention and the process of healing pain. good eating habits always represent the fulfillment of optimal nutrition. (Romance, 2016). The diet that often causes dysmenorrhoea is the pattern of consumption of fast food or fast food, the habit of consuming fast food excessively will have an impact on increasing the cascade of prostaglandins which result in hypertonus and vasoconstriction in the myometrium so that ischemia occurs and this can result in dysmenorrhea. ((Damayanti et al., 2022).

The diet during the Covid pandemic has increased by 3 times a day, especially in consuming fast food because the factor of the number of promo advertisements online makes them interested in buying it, following the prevailing trend matters, including by consuming fast food types of fast food, this is because the presentation is fast so that it can save time, can be served when and in order. (Praja, 2019)

2.   METHOD

The types and methods of this research are quantitative, with the design of the Cross Sectional study, which is research conducted to determine the relationship between dependent variables, namely the degree of dysmenorrhoea in students of the faculty of health sciences and independent variables including physical activity and diet. For its measurements using an ordinal scale with the calculation of the likert scale on the measurement of idependent variables and the guttman scale for the measurement of dependent

variables. Population is a generalization area consisting of objects / subjects that have a certain quantity and characteristics set by the researcher and then conclusions are drawn. (Nature et al., 2019). The population in this study was students of the faculty of health sciences which amounted to 344 female students. Data collection was carried out in May 2022. The sampling technique in this study is a stratified random sampling technique based on the strata of the study program, so the total number of research samples is 119 students of the faculty of health sciences, university eleven april.

3.   RESULTS AND DISCUSSION

3.1. Results

The results of this study can be seen from univariate and bivariate tests, in the univariate analysis this study was carried out to determine the relationship between physical activity and diet with the degree of dysmenorrhoea in students of the Faculty of Health Sciences during the Covid-19 pandemic, so that the results of this univariate analysis helped in testing bivariate analysis with the Chi Square statistical test. Then the univariate and bivariate test results with data processing applications by SPSS 0.16 produce the following data:

Table 1. Frequency Distribution of Physical Activity

No.	Categories	Sum	
		F	Presentasi (%)
1.	Light	56	47.1
2.	Keep	51	42.9
3.	Heavy	12	10.1
	Sum	119	100%

Source: Primary Data 2022

Based on table 6, it can be seen that the frequency that has the most dominant level of physical activity is in the mild category, namely 56 respondents (47.1%).

Tabel 2. Fast Food Frequency Distribution

No.	Categories	Sum	
		F	Presentation (%)
1.	Infrequently	56	47.1
2.	Often	63	52.9
	Sum	119	100%

Source: Primary Data 2022

Based on table 7, it can be seen that the frequency of fast food diet in female students is the most dominant in the frequent category of 63 respondents (52.9%).

Table 3. Frequency Distribution of Dysmenorrhea Degrees

No.	Categories	Sum	
		F	Presentation (%)
1.	Light	23	19,3
2.	Keep	30	25,1
3.	Heavy	66	55,5
	Sum	119	100%

Source: Primary Data 2022 Based on table 8, it can be seen that the most dominant frequency of dysmenorrhoea degree scale levels is in the weight category of 66 respondents (55.5%).

Table 4. Chi Square Test Results Physical Activity and Degree of Dysmenorrhoea

Physical Activity	Degree of Dysmenorrhoea								Total		p-value
	No Pain		Light		Keep		Heavy				
	f	%	f	%	f	%	f	%	f	%	
Light	0	0	5	8,9	6	10,7	45	80,4	56	100	
Keep	0	0	12	23,5	18	35,3	21	41,2	51	100	**0,000**
Heavy	0	0	6	50,0	6	50,0	0	0	12	100	
Total	**0**	**0**	**23**	**19,3**	**30**	**25,2**	**66**	**55,5**	**119**	**100**	

There is a relationship between Physical Activity and the degree of dysmenorrhoea in students of the Faculty of Health Sciences, Sebelas April University during the COVID-19 pandemic in 2022 with a p-value of 0.000 < alpha. So it can be concluded that Ha being accepted and Ho being rejected means that there is a significant relationship between physical activity and the degree of dysmenorrhoea in students of the university's faculty of health sciences during the covid 19 pandemic in 2022.

Tabel 5. Chi Square Dietary Test Results and Degrees of Dysmenorrhoea

Consumption diet (fast food)	Degree of Dysmenorrhoea								Total		p-value
	No. Pain		Light		Keep		Heavy				
	f	%	f	%	f	%	f	%	f	%	
Infrequently	0	0	22	39,3	21	37,5	13	23,2	56	100	**0,000**
Often	0	0	1	1,6	9	14,3	53	84,1	63	100	

Total	**0**	**0**	**23**	**19,3**	**30**	**25,2**	**66**	**55,5**	**119**	**100**

There is a relationship between Diet and the degree of dysmenorrhea in students of the Faculty of Health Sciences, Sebelas April University during the COVID-19 pandemic in 2022 with a p-value of 0.000<Alpha, it can be concluded that Ha is accepted and Ho is rejected means a significant relationship between consumption diet (fast food) and dysmenorrhea degrees in students of the faculty of health sciences of the university eleven April during the covid 19 pandemic in 2022.

3.2. Discussion

From the results of the researchers' observations, it can be seen that there is a significant relationship between respondents who do light physical activity and respondents who do moderate and heavy physical activity where respondents who do light physical activity tend to experience a scale of dysmenorrhea degrees with a heavy category, on the contrary, respondents who do moderate and heavy physical activity tend to experience a scale of dysmenorrhea degrees with moderate and mild categories. The results of the study are in line with the study (Sugiyanto & Luli, 2020), showing a meaningful relationship between physical activity and dysmenorrhoea, it was found that respondents with mild physical activity levels tended to be more at risk of experiencing heavier dysmenorrhea.

Based on the theory that there is a meaningful relationship between the habit of physical activity of sports and the incidence of dysmenorrhoea, exercise can be one of the interventions to reduce the risk of dysmenorrhea events, exercise can increase blood flow to the pelvis and will also stimulate endorphins that act as non-specific analgesics. (Tristiana, 2017). In addition, regular physical activity can improve the work system of blood vessels so that it can reduce pain complaints and increase physical freshness. (Febriati, 2016)

From the results of the observations of this study, it can be seen that respondents who often consume fast food can result in a high number of degrees of dysmenorrhoea on a moderate to severe scale and respondents who tend to rarely consume fast food experience a scale of mild dysmenorrhea degrees. However, consuming fast food has now become a habit for students, especially the fair sex and based on research, it is found that most female students do like to consume fast food such as meatballs, instant noodles, seblak, and as for Korean-style snacks that are currently often consumed by female students, these fast food snacks can affect the degree of dysmenorrhoea.

The results of the following study are in line with the study (Praja, 2019), showing that the consumption habit of fast food p value of 0.000 < 0.05 stated that there was a meaningful relationship between respondents who often consumed fast food with a high degree of dysmenorrhea. This is supported by research that reveals that the diet that often causes dysmenorrhoea is the pattern of consuming fast food or fast food because the factor of the number of promo advertisements online makes you interested in buying it, following the prevailing trend things, including by consuming types of fast food fast food, this is because the presentation is fast so that it can save time, can be served at any time and in order only.(Indahwati et al., 2017).

Based on the theory (Purwaningsih, 2013) fast food is an unhealthy food, this is because the content of fast food contains a lot of fat and is low in nutrients. Consuming foods that contain a lot of fat triggers an increase in the secretion of prostaglandins where these prostaglandins themselves are formed from fatty acids. This increase in prostaglandins and vasopressins is what causes the arteries to develop vasocontriction and results in the uterus experiencing ischemia which can trigger the production of more prostaglandins, causing dysmenorrhea.

4. CONCLUSION

Berdasarkan hasil penelitian tentang hubungan aktivitas fisik dan pola makan dengan derajat dismenorea pada mahasiswi Fakultas Ilmu Kesehatan Universitas Sebelas April selama pandemi COVID 19 tahun 2022, yang dilakukan pada 119 responden dapat disimpulkan sebagai berikut :
1. Respondents who had a level of physical activity were mostly in the light category, namely 56 respondents (47.1%),
2. Respondents who had a frequency of fast food diets were mostly in the frequent category as many as 63 respondents (52.9%), and Respondents who had a degree of dysmenorrhea were mostly in the.
3. category of severe dysmenorrhea degrees, namely 66 respondents (55.5%), and there were no respondents who did not experience dysmenorrhea.

4. There is a relationship between Physical Activity and Diet with the degree of dysmenorrhea in students of the Faculty of Health Sciences, Sebelas April University during the COVID-19 pandemic in 2022 with a p-value of 0.000.

REFERENCES

Alam, H. S., Hidasari, F. P., & Triansyah, A. (2019). The Relationship Of Body Mass Index And Macronutrient Intake To Physical Activity In StudentsVaccinating 2019 Physical Education Fkip .... *Journal of Education Dan ...*, 1–11. https://jurnal.untan.ac.id/index.php/jpdpb/article/view/54139 Romance, R. (2016). No 主観的健康感を中心とした在宅高齢者にお る 健康関連指標に関する共分散構造分析Title. *Revista Brasileira de Ergonomia*, *3*(2), 80–91. https://www.infodesign.org.br/infodesign/article/view/355%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/731%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/269%0Ahttp://www.abergo.org.br/revista/index.php/ae/article/view/106

Becker, F. G., Cleary, M., Team, R. M., Holtermann, H., The, D., Agenda, N., Science, P., Sk, S. K., Hinnebusch, R., Hinnebusch A, R., Rabinovich, I., Olmert, Y., Uld, D. Q. G. L. Q., Ri, W. K. H. U., Lq, V., Frxqwu, W. K. H., Zklfk, E., Edvhg, L. V, Wkh, R. Q., ... فاطمى, ح. (2015). No 主観的健康感を中心とした在宅高齢者にお る 健康関連指標に関する共分散構造分析Title. *Syria Studies*, *7*(1), 37–72. https://www.researchgate.net/publication/269107473_What_is_governance/link/548173090cf22525dcb61443/download%0Ahttp://www.econ.upf.edu/~reynal/Civil wars_12December2010.pdf%0Ahttps://think-asia.org/handle/11540/8282%0Ahttps://www.jstor.org/stable/41857625Damayanti, A. N., Setyoboedi, B., & Fatmaningrum, W. (2022). Correlation Between Dietary Habbits With Severity of Dysmenorrhea Among Aldolescent Girl. *Indonesian Midwifery and Health Sciences Journal*, *6*(1), 83–95. https://doi.org/10.20473/imhsj.v6i1.2022.83-95

Febriati, L. D. (2016). Factors Related to the Incidence of Dysmenorrhoea in Students of D III Midwifery Study Program, Faculty of Health Sciences, Respati University Yogyakarta in 2015. Journal of Medica Respati ISSN: 1907 - 3887, XI(2), 12–22. medika.respati.ac.id

Indahwati, A. N., Muftiana, E., & Purwaningroom, D. L. (2017). The Relationship between Consuming Fast Food (Fast Food) with the Incidence of Dysmenorrhea in Young Women at SMP N 1 Ponorogo. Indonesian Journal for Health Sciences, 1(2), 7. https://doi.org/10.24269/ijhs.v1i2.612

Indrayani, T., & Antiza, V. (2021). Acupressure Counseling and Training to Reduce Dysmenorrhea Pain in Young Women in Babakan Ciparay Bandung. Journal Of Community Engagement In Health, 4(1), 249–253.

Praja, W. N. (2019). The Relationship between Fast Food Consumption Habits and the Incidence of Dysmenorrhoea in Students of the Sriwijaya University Medical Study Program Class of 2016. 30–41. https://repository.unsri.ac.id/23598/

Pratiwi, R., & Sjattar, H. (2021). The Relationship between Stress and Physical Activity with the Degree of Premenstrual Syndrome in Young Women in Mangasa Village, Makassar City. Scientific Journal of Brightening Health, 10(2), 206–214.Purwaningsih, S. (2013).

Bab Ii Landasan Teori. *Journal of Chemical Information and Modeling*, *53*(9), 1689–1699. http://sir.stikom.edu/1062/5/BAB_II.pdf

Saraswati, P. D. W. (2019). The Relationship between Calcium, Zinc and Vitamin E Consumption Levels with the Incidence of Primary Dysmenorrhoea in Students at Sma Negeri 8 Denpasar. 1, 105–112.

Sugiyanto, & Luli, N. A. (2020). The Relationship between Physical Activity and Dysmenorrhea Levels in Class XII Students of SMK Negeri 2 Godean Sleman Yogyakarta. University Research Colloquim 2020, 7–15. http://repository.urecol.org/index.php/proceeding/article/view/979

Tristiana, A. (2017). The Relationship between Physical Activity and the Incidence of Primary Dysmenorrhea in Students at Pondok Pesantren X in Bogor Regency. Nursing, 1, 93.